

**PHASE GRATING FOCUS MONITOR  
USING OVERLAY TECHNIQUE**

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**ABSTRACT**

An optical tool includes a tool body that is transparent to light. Pluralities of parallel opaque lines on the body form a first outline in the shape of the square, and a second outline in the shape of a square which is centrally located relative to and within the first-mentioned square. Each pair of adjacent parallel lines has therebetween a first region that allows transmission of light therethrough without changing phase thereof, and a second region alongside the first region that allows transmission of light therethrough while shifting the phase thereof by  $90^\circ$ . The phase shifting and non-phase shifting regions are positioned so that the images of the outlines provided by a lens on an object shift in position a substantial amount as the distance between the lens and the object is changed.